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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,274	10/26/2006	Michael A. Reid	CU-8471	8867

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EXAMINER	
HARCOURT, BRAD	

ART UNIT	PAPER NUMBER
3676	

MAIL DATE	DELIVERY MODE
12/27/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/579,274	REID, MICHAEL A.	
	Examiner	Art Unit	
	Brad Harcourt	3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,21 and 23-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7-11,21,23-25 and 27* is/are rejected.

7)☒ Claim(s) *3-6 and 26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/12/2010 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 9-11, 21, 23 and 24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Carmichael et al. (US Patent No. 6,220,357).

In reference to claim 1, Carmichael discloses a plug 30 for controlling fluid flow in a well bore at a packer or other sealing element (col. 6, line 67), the plug 30 comprising a substantially cylindrical body 6 adapted for connection to a threaded wellbore element, the body 6 including a bore (not numbered, see Figs. 22 and 23) through a portion thereof and a plurality of radial ports 3B for passage of fluid from the bore to an outer surface 5 of the body 6, an actuating member 7 moveable relative to the body 6 so as to cover each of the plurality of ports 3B in a first position and uncover each of the

plurality of radial ports 3B in a second position wherein movement of the actuating member is controlled by an actuating mechanism 32, the mechanism 32 being operable under pressure in the well bore to set the plug in a first natural state (Figs. 19-21) wherein the actuating member 7 is in the first position for a pressure under a predetermined pressure range; a second closed state (Figs. 28-30) wherein the actuating member 7 is locked in the first position regardless of the pressure; and a third open state (Figs. 25-27) wherein the actuating member 7 is moved to the second position on increasing the pressure to the predetermined pressure range and holding the pressure in the range for a predetermined time.

In reference to claim 2, the actuating mechanism 32 is a channel in actuating member 7, which is a piston.

In reference to claim 9, actuating member 7 is a sleeve.

In reference to claim 10, sleeve 7 is engaged by locking key 22.

In reference to claim 11, the predetermined range to actuate the tool is any pressure above 1500 psi (col. 4, line 55).

In reference to claim 21, Carmichael discloses a method of controlling fluid flow in a well bore through a plug 30 operated by an actuating mechanism 32, the method comprising the steps of:

providing a plug 30 comprising a substantially cylindrical body 6 adapted for connection to any conventional threaded wellbore element, the body 6 including a bore

(not numbered, see Figs. 22 and 23) through a portion thereof and a plurality of radial ports 3B for passage of fluid from the bore to an outer surface 5 of the body 6,

providing an actuating member 7 movable relative to the body 6 so as to cover each of the plurality of radial ports 3B in a first position (Fig. 22) and uncover each of the plurality of ports in a second position (Fig. 25);

providing an actuating mechanism 22 adapted to move the actuating member 7;

increasing pressure from a surface of the well bore to within a predetermined range (high enough to cause shear member 1 to fail); and

keeping the pressure within the predetermined range over sufficient time to cause the actuating mechanism 22 to move the actuating member 7 from the first position (Fig. 19) to the second position (Fig. 25) to uncover each of the plurality of radial ports 3B.

In reference to claim 23, a predetermined range of above 1500 psi (col. 4, line 55) is required to actuate the tool.

In reference to claim 24, actuating member 7 is locked in the first position (Fig. 28) after the predetermined pressure actuates the plug 30 to the second position (Fig. 25) and then pressurized again to lock the tool in the locked first position (see Fig. 30 for locking detail).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7, 8 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carmichael et al. (US Patent No. 6,220,357) in view of Henderson (US 6,978,840).

Carmichael discloses all of the limitations of claim 7 with the exception of a pressure sensor located in the bore, a processor to control a motor in response to the pressure, and wherein the motor causes relative movement between the actuating member and the body. Henderson discloses plug adjacent to packers or other sealing elements 60 comprising a cylindrical body 80 with an actuating member 110 that moves relative to body 80 to cover or uncover ports in body 80. Pressure sensors 150 relay a pressure measurement to a processor 152 which causes an electrical actuating mechanism 125 to move actuating member 110 relative to body 80. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use an electric actuator and a pressure sensor to move an actuating member on the system of Carmichael in view of Henderson so that the apparatus can be actuated by a pressure condition measured in the wellbore rather than a pressure exerted from the surface.

In reference to claims 8 and 27, actuator 8 is a sleeve and it is engaged by key 22 that secures it in either the first or second position.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carmichael et al. (US Patent No. 6,220,357).

Carmichael does not disclose pressure testing above the plug. However, the examiner takes Official Notice that performing a pressure test in a wellbore is well known in the art. It would have been obvious to a person having ordinary skill in the art at the time of the invention to perform a pressure test in the operation of Carmichael so that an operator can ensure all parts of the apparatus are functioning properly.

Allowable Subject Matter

Claims 3-6 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant argues that the rejection to claim 1 should be withdrawn as Carmichael fails to disclose a plug as the apparatus disclosed by Carmichael is incapable of stopping axial flow through a wellbore. Claim 1 does not recite any limitations regarding the direction of flow that is stopped by the plug, so the argument is moot as it's not directed to differences between the claims and the reference.

Applicant also argues that the rejection to claim 1 should be withdrawn as Carmichael fails to disclose a second closed state with an actuating member that is locked in the first position regardless of the pressure in the direction of the plug. More specifically, Applicant argues that in the second closed state of Carmichael, the sleeve is primed for movement to the open position. Carmichael clearly discloses that "the

downhole tool 30 as shown in FIGS. 28, 29 & 30 and is in a locked and closed configuration" (col. 5, lines 63-65). The only description of Carmichael (relating to this embodiment) where the tool 30 is described as "primed" for opening relates to the first closed state shown in Figs. 19-21 (see col. 5, lines 53-56).

Applicant also argues that Carmichael fails to disclose a third open state where the actuating member is moved to an open position on increasing the pressure. Carmichael discloses "pressuring up" (col. 5, line 55) the arrangement shown in Fig. 22 so that the tool can later have the pressure bled off/reduced (col. 5, line 57) so that the tool moves to the open state of Fig. 25. As pressuring up is part of that process, Carmichael satisfies the limitations requiring an increase in pressure for an amount of time.

Applicant's other arguments are directed to the same issues discussed above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brad Harcourt whose telephone number is (571)272-7303. The examiner can normally be reached on Monday through Friday from 8:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shane Bomar can be reached on 571-272-7026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brad Harcourt/
Examiner, Art Unit 3676

BH
12/21/10